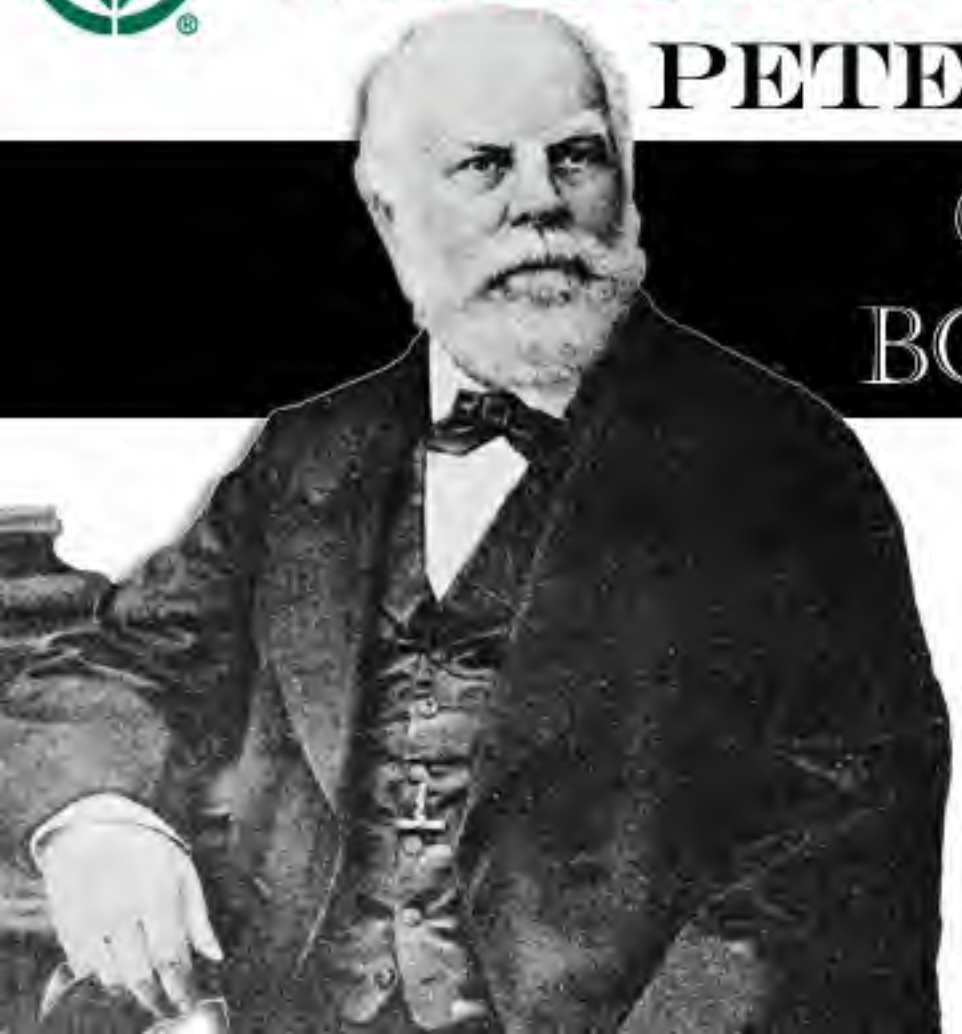
Missouri Botanical Garden
Peter H. Raven Library

George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Isaria Bulanderi Oct 10 1882

Strawberry Valley, Bingle Sept 1882

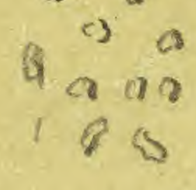
Microspora brown smooth

10.4 – 11.8 mm = 0.025 – 0.030 mm
415

22 – 25.5 = 0.37 – 0.42 mm
60

Surface of spore

× 150



Cells 15 – 25

5 – 7½ Inches long

Veins with narrow

Microspora brown smooth

13 – 15 = 0.031 – 0.036 mm long
415

272 – 253 = 0.37 – 0.42 mm
60

Surface of spore

The same

Cells 8 – 12

2½ – 3½ inches long

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Leitch & Corlies

DRUGGISTS

South West Corner Fifth and Market Streets.

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1440 Bodies Bolandi

Oct 17 1882

Bear valley in San Bernadino Mountains 7000' alt

Parish Aug 1st 1882

19.5 – 24.5 mostly 23 / 60 = 0,32 – 0.41 mostly 0.38 m/m. diam Macrosporg

10–12 / 2/15 = 0.024 – 0.029 m m microspores whitish, smooth

stomata !

no basal bands

x150

Stone marked vermiform ridge

faint tuberculate ridges

sometimes smooth

Bolandri has brown microspores are those I have here seen not fully ripe ?

outer inner sporgn

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Isoetes Nuttallii

Nov 4 1881

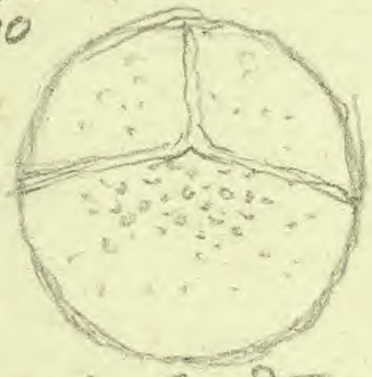
macrospores

sporangia & vel. leaf bases on Columbia Bar

W H Sacks dorsa Aug 1881

$\frac{19.5 - 21.5}{60}$ = 0.32 – 0,36 mm diam

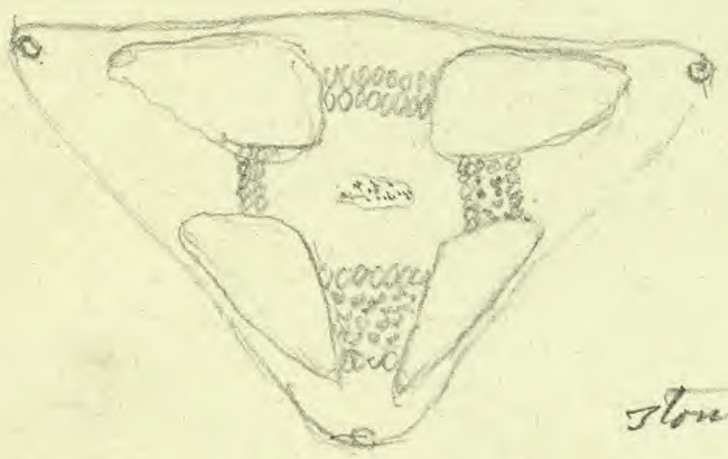
×60



pale lead gray bluish

×150

×30



3 periph. bases stout dissepiments very thick anterior 9–10 cell series posterior above 7, below only 4 series lateral ones 6 – 8 series stomata abundant

leaves

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Marble Building, cor. 4th and Olive Sts..

ST. LOUIS, MO.

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the walls of ducts, c, c × d, d consist of only two cell layers

Isoetes Nuttallii Braun

Oregon, Hall 1871 № 693

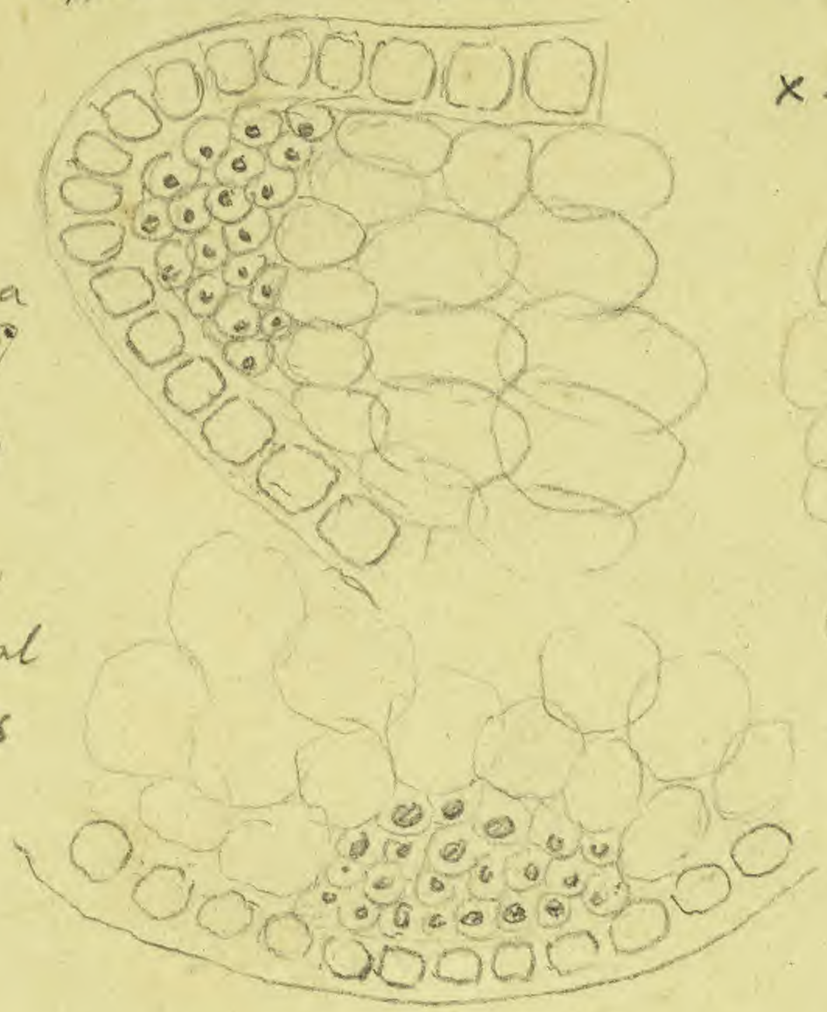
Jan 29 1874

upper lateral bundle a

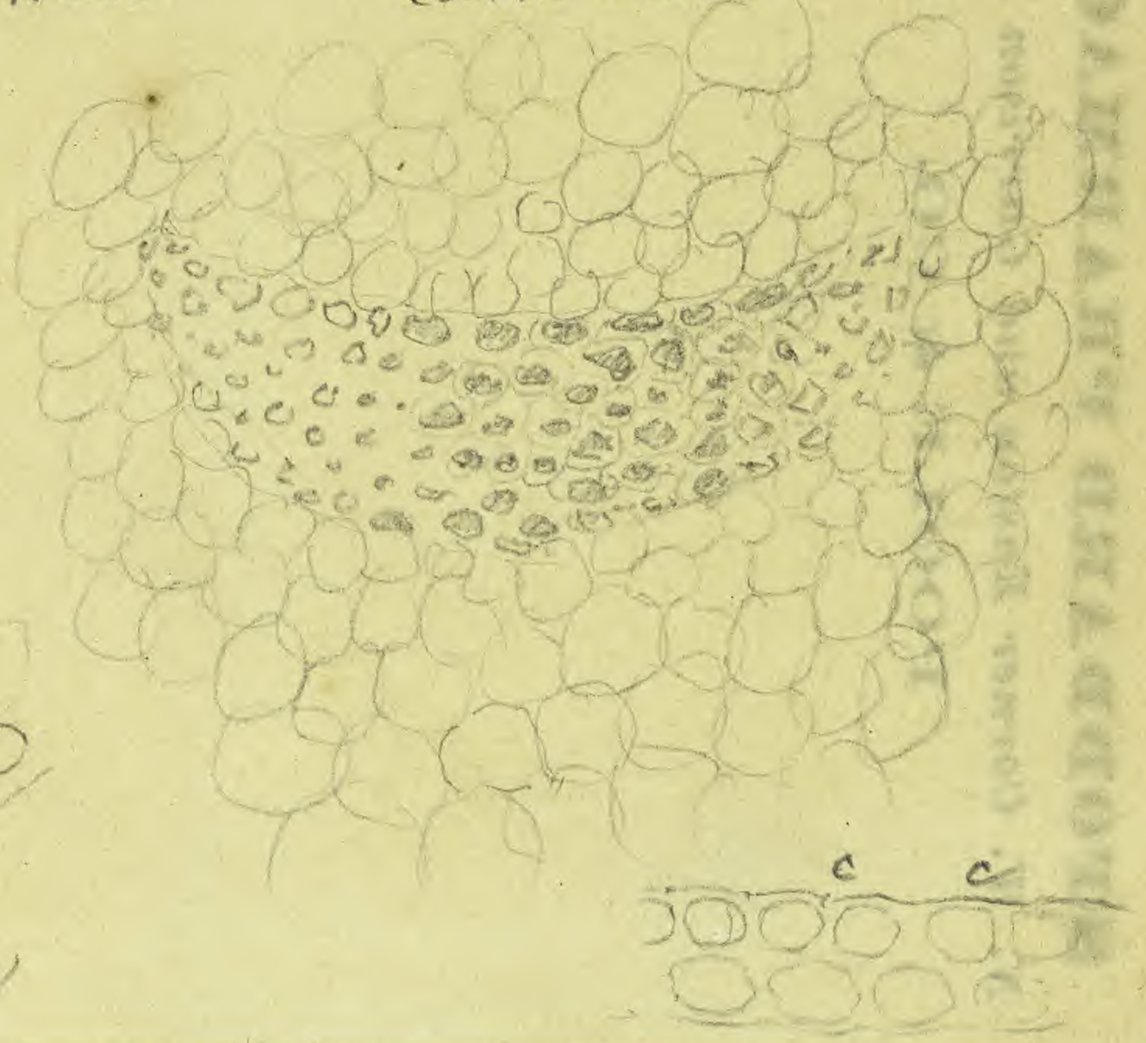
× 280

central bundle

only 3 lateral vast bundles



dorsal bundle (b)



STODDARD PHARMACY,

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Nuttall ex 1834 Isoetes Nuttallii A. Braun Octob 21 1866

" Isoetes * opaca Columbia R. to the U. States " Nuttall ~ HCR Durand

Epidermis X280
full of stomata

diam of spores unripe
$\frac{15-22\frac{1}{2}}{60} = 0.25-0.37$ mm

unripe spore

Cases 15–18 very slender apparently 0.7–0.9 mm. ~ diamb 2½–3 inches or 6–7½ centimet~ Long

Sporangium very thick opaque (not transparent) cells not recognizable (because too young ??)

x 2

velum apparently entire, Covering whole sporangium

Alex. Leitch,

APOTHECARY & CHEMIST,

Cor. 4th & Olive Sts., St. Louis.

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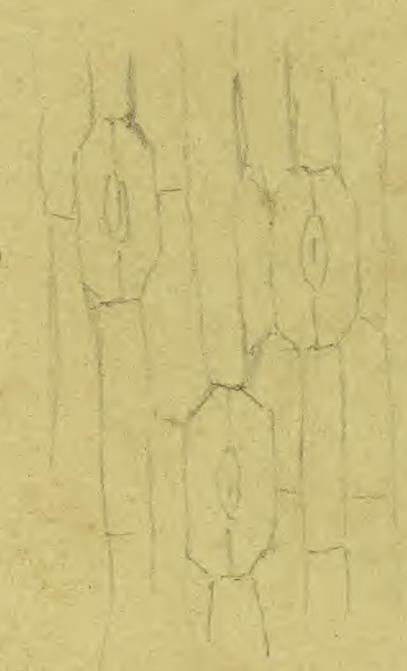
Dictis Nuttallii

Oregon & Hall Ill. 1871

July 5 1871

Section showing a Stoma
the roughy epidermis and chlorophyllian
× 280 cells

only two Stoma of cells



× 280

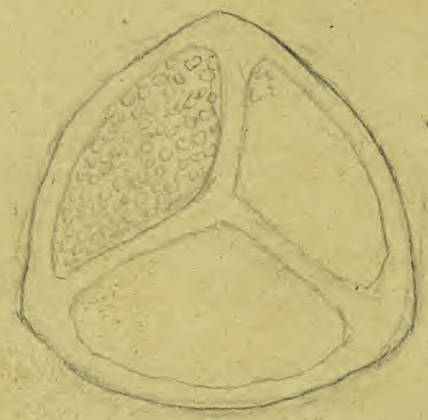
× 30

Dissepiments 6 or 8 layers of cells
upper and lateral margins only
1–2 layers — cavities small
backs of cells only 3 upper ones
smallest.

× 2

= diameter of spores

$\frac{29.5 - 31.3}{60}$ = 0.49 – 0.52 mm



Spore × 60

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South-east corner Fourth and Market Streets,

ST. LOUIS.

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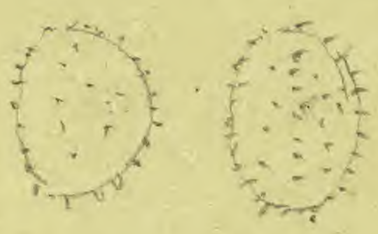
Isoetes melanopoda?

Aug 10 1882

banks of Lake, opposite St Louis

H Eggert

Dioecious



× 415

microspores spinulose

0.025 – 0.027 mm

macrospores very unequal

$\frac{18 - 24.5 - 29}{60}$ = 0.30 – 0.42 (mostly) – 0.48

macrospores with loose dusty covering which obscures the surface. This is soluble, washed and rubbed, nearly smooth. It is almost like a fine network of Engelmann broken up!

The trunk is not like Melanopoda, more like Engelmanni

Dioecious

Male

Spore-

cases 15–16 inches long

sporangia (long and narrow

× 20

dissepiments

~~it~~ 3 cells thick

lowest one rather

with 4

central bundles very thick

& peripheral less bundles

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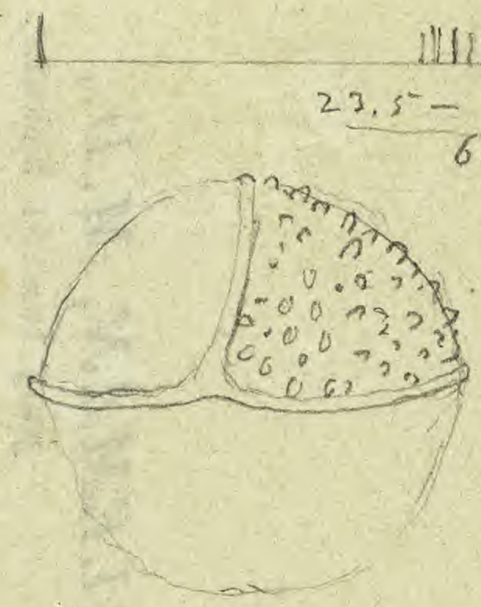
Isoetes echinospora
c.g Bridge
Lakes near Shasta

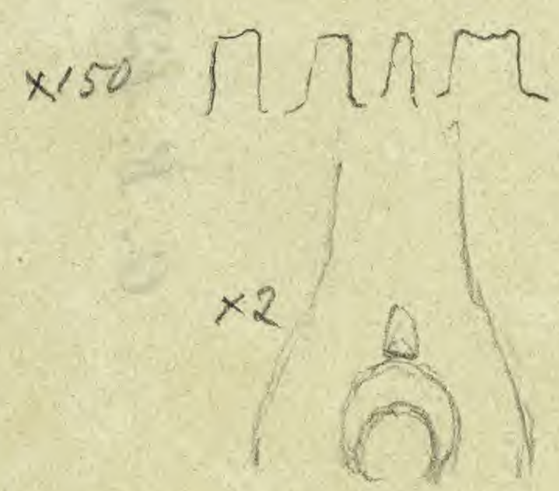
Sept 21 1882



microspores 13 – 15 / 415
= 0.031 – 0.036 mm.

smooth, white

stomata, scarce



sporangia – lightly spotted

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R. C. HARRISON,

508 Leffingwell Avenue,

Druggist & Apothecary

G. F. ENGLEMAN, M.D.,

3003 Locust Street.

1847

Linnaea vol 20. p. ~~269~~ 269
a270

Germination of Isoetes

a few words only

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1849

Colored plates of the Botanique algerienne,
Livr. 12 & 14. published Aug & Nov 1849
without text, which has never appeared.

13914

Febry. 6th 1882

Dear Uncle.

1850

G. Mettenius, Beiträge zur Botanik

fasc. 1. 1850

was the first to distinguish the anthe-

ridia of the microspores of Isoetes

vide J Gay Etymn Bot. — Bull Soc Bot

France vol 8 & 9. 1861 & 1862. (p. 28)

where it is stated that the macrospores

open only through decomposition of the

shell. — Oct 21 the contents of the macrospores

consist a milky liquid.

See also Hofmeister Beit zur Kenntnis der

Gefässkrypt. 1852. p. 123–167. tab 1–16

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decide upon the name of that
Pinus, which You say is a distinct
species within a week or so after
receiving this note, will You be
so kind as to let Mr. H. H. Patterson
of Oquawka Ill. know it. Mr. P.
is printing my labels. Your report
on the Pines. &c has come to hand,
Accept my thanks.

Very truly Yours

W. H. Suksdorf

13915

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1852

Hofmeister Beiträge zur Kenntniß
der Gefäß Kryptogamen 1852
Sporules Fecondation p. 123–167
tab 1–16

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1892

DR.

13916

200

1860

Soctes, Linnea 30 (1857–60)

p. 740

L. Malmeanniana Cesati & Notar

extensive description

Germinator see Petterson — Linnea vol 20 1847

p. 268269 — von Little, a description

13917

ALEX. LEITCH

APOTHECARY & PHARMACEUTIST

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Asters Nuttalli A. Gray - Cliff.

Oregon Nuttall: Hc Hook.
Ch. Geyer: 6. 573

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Cor. 4th & Olive Sts., St. Louis.

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1840 Linnaea vol XIV. 1840 pag 181

Hugo Mohl Bau der Stamme von Isoetes Carinata* & tab III.

p. 182 two Cobes = I. Carinata 3 = I. Setacea.

p. 183 youngest roots in the grove!

p. 184 external layers decay away, as already noticed by Delile and by Schlenberg. 1 — 3 layers (? as many years) are ~~are~~ ~~ex~~ ~~ex~~ ~~ex

13919

Saint Louis, April 6. 1867

Will Dr Engelmann please to call to see our oldest child this morning, she having had quite a fever in the night

Yours
John C. Powell
No 1308 Pine St

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Febr 1 1874

Isoetes Nuttallii A Braun ~~in Litt~~ ; emersed ; terrestrial trunk slightly bi-lobed, leaves (20–60, 3–6 or 7 inches long) 3-angled slender, firm erect, with numerous stomata, and 3 perfect bast bundles, (sporangia mostly oblong, entirely covered by the velum ; macrospores (0.25 – 0.47 mm in diam) densely covered with minute (distinctly projecting) ~~very~~ but prominent ~~flat~~ rounded warts ; ~~angles of the~~ microspores ~~deep brown~~ 0.025 – 0.028 mm long, ~~slightly~~ papillose, deep brown ;

On damp flats or springy declivities in Oregon (Nuttall 1834 ; Ch Gayen 1843 ; E Hall 1871), according to Mr Hall's statement, who found the plant abundantly about Silverton, Willamette Valley and supplied numerous specimens to the herbaria

it is never submerged. This species are from a few inches to one inch in diameter ; the leaves, rigid, (~~with thick papillose~~) 1/3 – 1/2 in. – 1 diam, are six-sided at once the land plant ; the 3 bast bundles correspond with the 3 angles, 2 upper lateral & one dorsal one. the stomata are usually thick, consisting of 4 in the transverse diameter of 6–7 and in the ventral row of 8–9 rows of cells ;

+ the trunk, shows in a transverse section, is only superficially divided into 2 lobes by shallow grooves

~~The entire velum &c~~

This peculiar species is in its vegetative characters closely allied to *I. Melanopoda* of the upper Mississippi valley (which two years ago Mr Hall discovered in Texas, always with pale leafbases) ; but in the form of the velum it resembles the two Florida species *I. flaccida* and *I. Chapmani* — subinermis

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Isoëtes

1869 Apr Mail

176–9

An Engelm schreibt 10 Aug 69

Braun dies March 29 1877

Einer Verschiedenheit wegen mitgetheilt.

Publications in my Library

1840 H. v. Mohl Bau des Stammes von Isoetes lacustris [Lebermoos von Fr. Gay] Linnea 14. (1840) 181 t. 3

1846 A Braun in Flora, Bank Amerika Isoetes

" —— —— April p. 180 I. lacustris

1847 —— —— Dan I. Lacustris

" —— & Engelm in Silliman Journ (Ice Marsilea papers

" Metten Ros & Linnaea XX p. 269 & 70 Germination

1856 Englmann in Gray's Manual p. 605

1859 Cesati in Linnaea p. 740 I. Malinverniana

1861 Durieu in Bull. Soc. Bot. France 8 p. 164

1862 A Braun Two German Isoetes &c.

" J Gay Excursion for two Isoetes &c

1864 A Braun Isoetes of Sardinia

" Durieu New American Isoetes &c

1867 ~~1862~~ Englmann in Gray's Manual ed 5 p. 675

(A Braun Isoetes Africana in Kuhn's Filices Afric.) Not known

1868 A Braun Australian Isoetes (compare Key) p. 628

1869 —— New Zealand Isoetes

Am Naturalist vol 8 p. 214. 215

1874 Englmann Western Isoetes in Penn

1877 —— & Oak paper in Trans. Ac. Sc. St. Louis III p. 395 note I. melanospora Yellowstone

1878 Bot Gazette p. 1. Isoetes Coulteri

" Cesati In echinospora in Bresslau

1393921

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